EX112

PASSIVE COAXIAL LOUDSPEAKER

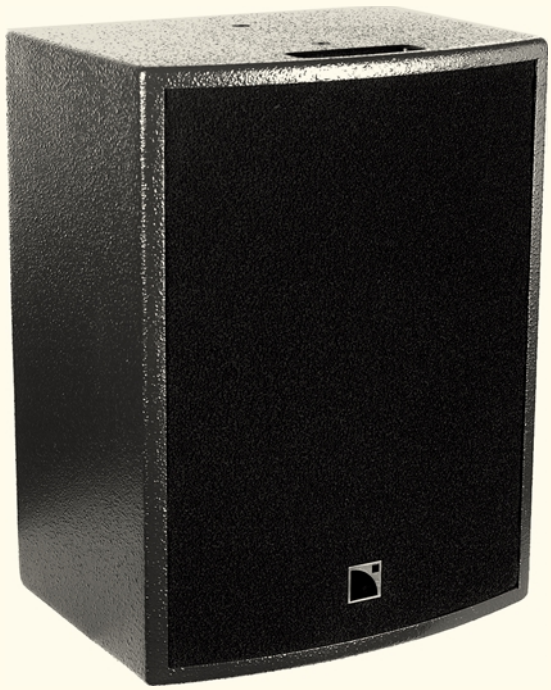
APPLICATIONS

The EX112 is a passive loudspeaker containing a 2" compression driver that is directly loaded by the 12" loudspeaker in a true coaxial alignment. Advantages of the coaxial approach include: total wavefront coherency at any frequency, identical horizontal and vertical coverage, ideal matching of the directivity to semi-reverberant environments, single point source radiation and excellent phase coherency. Coaxial technology also provides symmetrical dispersion characteristics that are free of the polar lobing effects typical of traditional horn and woofer combinations.

The EX112 can be used in medium power FOH applications for theatres, nightclubs or corporate events and is ideal for distributed (multiple source) applications. Examples of distributed systems include delay rings for large scale installations and surround effects channels for theatre or multimedia. Due to its compact size and full range passive performance, the EX112 is also a cost effective solution for front fill in concert sound reinforcement. The EX112 can also be used with subwoofers for side fill or drum monitoring.

The L-ACOUSTICS MTD112 LLCa is a stereo analog controller that provides optimum equalization and band limiting for the EX112 along with system protection. Active sense return monitoring guarantees safe operation and the controller provides both thermal protection and cone excursion limiting. For signal routing flexiblity, L/R input signal summation is available and a subwoofer feed is provided for use with SB 115 or SB 218 subwoofers.

L-ACOUSTICS PROFESSIONAL SOUND SYSTEM



- **Passive two-way enclosure**
- **Dual concentric (coaxial) driver assembly**
- **Suitable for medium power FOH, distributed systems and fill applications**
- **Compact, rugged construction, flexible rigging**
- **Analog processor control**

SPECIFICATIONS

L-ACOUSTICS specifications are based on measurement procedures which produce unbiased results and allow for realistic performance prediction and simulation. Some of these specifications will appear very conservative when compared with other manufacturer's specifications. All measurements are conducted under free field conditions and scaled to a 1 m reference distance unless otherwise indicated.

Frequency Response

Frequency response	80 - 16k Hz (±3dB)
Full system bandwidth[1]	40 - 16k Hz (±3dB)

Sensitivity[2]

(2.83 Vrms @ 1m)	97.8 dB SPL	80 - 16k Hz

Power Rating[3]

			Amplification	Impedance
(Long Term)			(Recommended)	(Nominal)
45 Vrms	250 Wrms	1000 Wpeak	500 W	8 ohms

Nominal Directivity (-6dB)[4]

Axi-symmetrical	80° (± 20°)

System Output[5]

	SPL	
One enclosure	121.5 dB (rms)	127.5 dB (peak)

Components

LF	1 x 12" weather resistant loudspeaker (2" voice coil)
HF	1 x 2" compression driver (coaxial assembly)

[1] Extended system bandwidth using SB115 subwoofer

[2] Sensitivity is the average SPL measured over the component's rated bandwidth

[3] Power rating displays the long term RMS power handling capacity using pink noise with a 6 dB crest factor over the component's rated bandwidth

[4] Directivity is averaged over the 1-10 kHz range

[5] System Output gives the unweighted SPL output of the system referenced to 1 m, including preset equalization and band leveling adjustment

Enclosure

• Height	540 mm	21.3 in
• Width	410 mm	16.1 in
• Depth	317 mm	12.5 in
• Net Weight	25 kg	55.1 lbs
• Shipping Weight	27.5 kg	60.6 lbs
• Shipping Dims	615 x 470 x 465 mm	
	24.2 x 18.5 x 18.3 in	

- Connectors : 2x 4-pin Neutrik speakon
- Material : 18 mm Baltic birch plywood (sealed, screwed, rabbeted angles)
- Finish : Maroon-gray™
- Grill : Black epoxy perforated steel with acoustically transparent foam
- Rigging : Integrated flying hardware and handles

Additional Equipment

- L-ACOUSTICS MTD 112 LLCa analog controller
- L-ACOUSTICS LA 15 or LA 17 power amplifier
- L-ACOUSTICS SB115 subwoofer
- L-ACOUSTICS SB218 subwoofer

L-ACOUSTICS® is a registered trademark

ARCHITECT SPECIFICATIONS

The enclosure shall be a passive, two-way, coaxial full range loudspeaker containing one direct radiating, bass reflex-loaded 12-inch low frequency transducer and one 2-inch titanium alloy diaphragm compression driver. The cone body of the low frequency driver shall provide pattern control loading of the compression driver and yield an 80-degree conical dispersion pattern that is vertically and horizontally symmetrical. Power handling capacity shall be 250 Wrms at a nominal8 ohm impedance. As a full range system, the usable frequency range shall be 80 Hz to 16 kHz with less than ±3 dB variation in frequency response.

The enclosure shall be used with a dedicated analog controller that employs sense return processing from the amplifier outputs. The analog controller shall provide bandlimiting and corrective component equalization with three settings that are optimized for different applications. The analog processor shall employ active sense return monitoring to provide both thermal protection and cone excursion limiting for the enclosure. The analog processor shall allow L/R input signal summation and provide signal processing for use of the enclosure in conjunction with subwoofers.

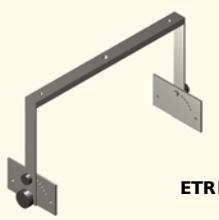
The enclosure shall have a rectangular shape with a curved front profile. Dimensions shall be 54 cm (21.3 in) high, 41 cm (16.1 in) wide by 31.7 cm (12.5 in) deep and the enclosure weight shall be 25 kg (55.1 lbs). Cabinet construction shall consist of 18 mm (0.70 in) Baltic birch plywood with internal steel bracing and joints that are sealed, screwed and rabbeted. The finish shall be maroon-gray high resilient paint.The front of the enclosure shall be protected by a black powder-coated, 1.5 mm thick steel grill that is covered with 10 mm (0.4 in) thick acoustically transparent open cell foam. Connection to the enclosure shall be via two 4-pin Neutrik Speakon connectors.

Four recessed attachment locations shall be provided (two on each top and bottom side) for rigging the enclosure with an adjustable U bracket. A 35 mm diameter, recessed pole mount socket shall also be provided.

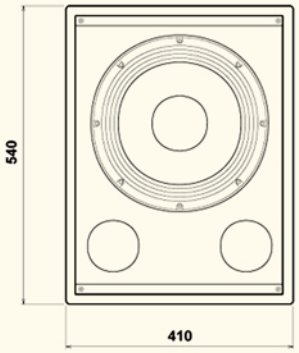
The loudspeaker system shall be the L-ACOUSTICS EX112. The analog loudspeaker signal processor shall be the L-ACOUSTICS MTD 112 LLCa.

ACCESSORIES

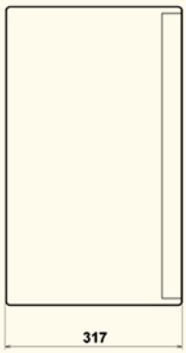
ETR 1 : Adjustable U Bracket for wall or scaffold mounting of the EX112. A bracket mount plate is first attached to the4 mount locations provided on the enclosure (2 each on the top and bottom sides).The U bracket is then attached to the mount plate using two threaded knobs - one for attachment of the bracket, one for tilt of the enclosure.



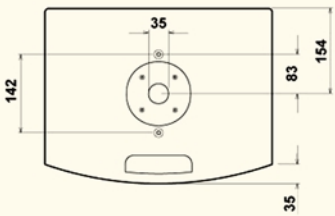
ETR1



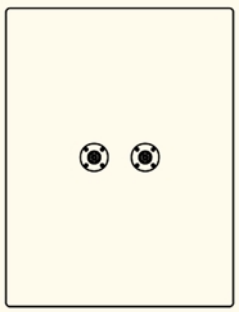
FRONT



SIDE



TOP



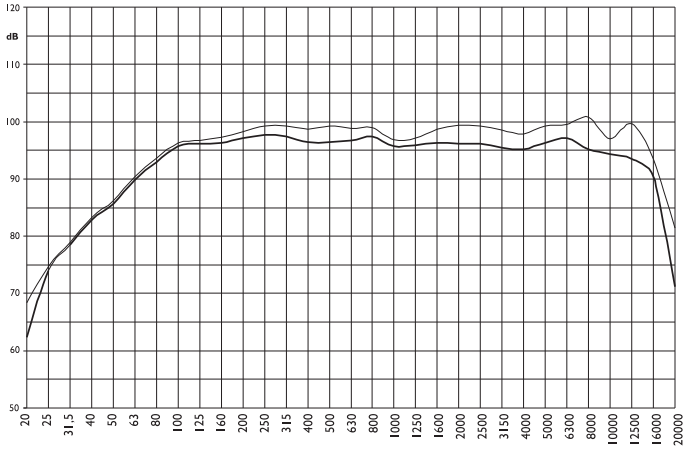
REAR

SCALE 1:15

EX112

PERFORMANCE DATA

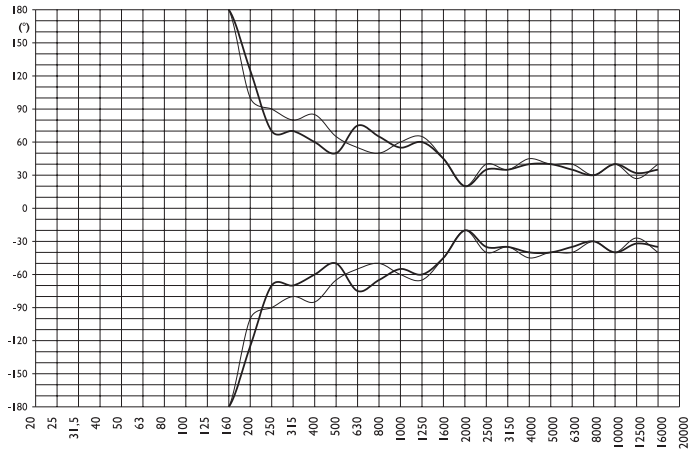
FREQUENCY RESPONSE



On axis frequency response (freefield)

Frequency response averaged over specified beamwidth

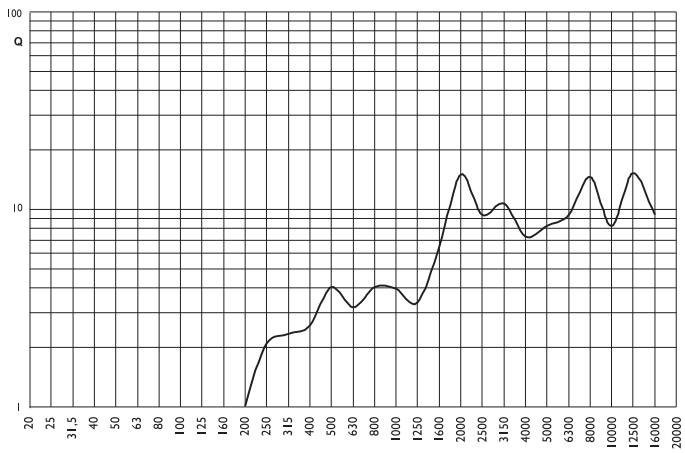
BEAMWIDTH



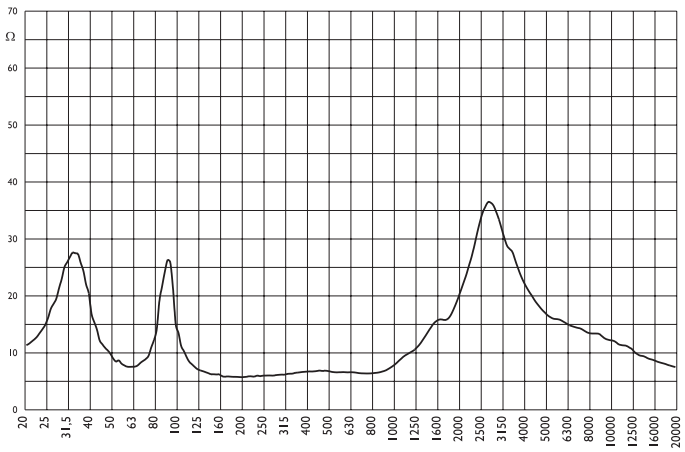
Horizontal

Vertical

DIRECTIVITY FACTOR Q



IMPEDANCE



MTD112 LLCa

ANALOG CONTROLLER

DESCRIPTION

The MTD 112 LLCa line level controller is an analog signal processing unit that optimizes the performance of the EX112. The stereo controller accepts two signal inputs and provides two processed outputs for the respective input channels. The main functions of the MTD 112 LLCa controller are as follows:

- Bandpass filtering and equalization (3 modes, selectable)
- Mono input summation for subwoofer or center fill drive
- Crossover filtering, equalization for subwoofer drive
- Sense Return processing for thermal protection of speaker components and cone excursion limiting (voltage and frequency dependent)

Three different equalization/bandpass filtering modes tailor the frequency response of the EX112 for different applications. In MONITOR mode, high pass filtering is set at 45 Hz and a low frequency shelf is applied to provide an equalization contour suitable for floor monitor applications. In FRONT mode, a 45 Hz high pass filter is employed and a more aggressive low frequency shelf provides an equalization contour more suitable for FOH use. In X-OVER mode, a 100 Hz high pass filter is applied and there is no low frequency shelf since the EX112 is intended to be used with a subwoofer.

When the second front panel switch is set to SUB mode, the mono output on the rear of the controller provides a summed output of the two signal inputs with low pass filtering set at 100 Hz and equalization optimized for the SB 115 subwoofer (equalization for the SB 218 is selectable via internal jumper). Alternatively, the summed MONO signal output can be used to feed a power amplifier allotted to a central fullrange fill loudspeaker (SUM mode).

The MTD 112 LLCa is connected in series with two amplifier channels for sense return processing, i.e., amplifier outputs are connected to the "Sense Return" input of the MTD 112 LLCa. Protection circuitry monitors the signal applied to the loudspeakers to provide thermal protection of speaker components plus voltage and frequency dependent cone excursion limiting.

SPECIFICATIONS

Technical

Inputs	Electronically balanced 10 kΩ input (pin 2 hot)
Outputs	Electronically balanced 50 Ω output (pin 2 hot)
Input Headroom	+20 dBV
Nominal Gain at 200 Hz	0 dB (unity gain)
Signal to Noise	> 84 dB
Dynamic Range	> 104 dB
THD	<0.1% (20 to 20k Hz @ 0 dBV)
Bandpass/Equalization Filters	3 modes: 45 Hz (HP), 45 Hz (HP+EQ), 100 Hz (HP) Low-pass: 20 kHz Subwoofer: 40 - 100 Hz (LR 24 dB/octave slopes)
Speaker Protection	RMS limiter & peak limiter

Front & Rear Panel

Indicators	Signal: green LED for each section Control: yellow LED for each section
Front Panel Controls	AC power, MODE select, SUB/SUM select
Rear Panel Control	IN PHASE/OUT PHASE (MONO output polarity)
Front Panel Connectors	Channel 1, 2 XLR inputs, parallel loopthrough Loudspeaker: 2x 4-pin Neutrik speakon
Rear Panel Connectors	Sense Return: 4-pin Neutrik speakon MONO, Channel 1, 2 XLR line outputs
Power Requirement	100 V - 240 V 50/60 Hz
Power Consumption	15 W

Physical

Finish	Black anodized front panel, white serigraphy
Net Dimensions	483 x 44 x 305 mm 19 x 1.75 x 12.0 in
Shipping Dimensions	505 x 80 x 415 mm 19.9 x 3.1 x 16.3 in
Net Weight	3.75 kg 8.3 lbs
Shipping Weight	4.8 kg 10.6 lbs

FRONT

BACK

Specifications subject to change without notice

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